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SOME NOTES ON THE ANATOMY OF THE THYROID GLAND IN SELACHII.

A PRELIMINARY COMMUNICATION.

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During some investigations into the relation of the blood supply to the glandular masses of the thyroid, pursued at the Marine Biological Laboratory at Woods Hole during the summer of 1905, I found it necessary to first inquire into the anatomy and anatomical relations of the thyroid gland in the Selachii. The anatomical literature yielded such scant results, both text and illustrative references being only causal, that I deemed it of some possible service to future investigators to present a short account of the results obtained.

The thyroid gland of the dogfish (*Mustelus Canis*) was exposed by the following process: A median longitudinal incision was made through the integument from the inferior mandible to the anus, care being taken not to injure the underlying structures immediately beneath, and closely adherent to the integument, we come, in the inframandibular and hyoid region, to the transverse fibers of the constrictor pharyngii muscle. An incision through this comparatively thin sheet of muscular tissue exposed the coraco-mandibular muscle, whose fibers, lying parallel to the body axis, were then severed by a transverse incision 2.5 to 4.5 cm. from its insertion; the anterior end was then reflected to its mandibular attachment. This exposed the thyroid gland, lying just behind the posterior border of the mandible, and resting upon the coraco-hyoid muscle whose fibers parallel those of the coraco-mandibular muscle which is the more conspicuous because of its size and compactness.

The thyroid gland is easily recognized by its shape and color, it being typically shield-shaped, the convex border forward, and having cells which carry a pronounced amount of yellowish pig-

ment of an almost orange hue. The organ is almost sheet-like in its thinness. A dogfish of 115 cm. had a thyroid gland measuring antero-posteriorly 19 mm., from side to side 42 mm., and in thickness 1 mm.; it weighed 502.5 milligrams.

The thyroid gland is approximately unilobular, yet shows some evidence of beginning lobulization. In addition to an almost separate posterior portion it often has in its main body certain indications of a tendency to further lobular subdivision formed by interruptions of the glandular tissue which are filled in by septa or trabeculae of loose connective tissue. There may be three incisures of this sort, all beginning at the posterior border of the main portion of the gland and extending, almost at right angles to the border, into the glandular substance. The most

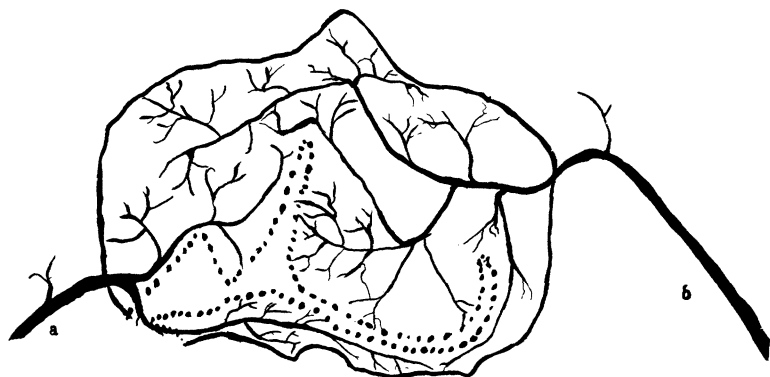


FIG. 1. Outline of the thyroid gland of a dogfish as viewed from the ventral surface, showing the distribution of its arterial supply. The dotted lines indicate an area over which the thyroid substance was deficient, *a*, right (dorsal) thyroid artery; *b*, left (ventral) thyroid artery.

constant of these fissures, and the largest, is situated in the median line; a smaller indentation is often observed on either side of this primary one, almost parallel to it, and so placed as to be approximately equidistant between the primary fissure and the lateral border of the gland.

The smaller fissures may vary in extent, but the one on the right of the median line is nearly always shorter than that on the left. This difference is readily understood by a reference to the anatomical relation of the right thyroid artery to this portion of

the gland. The indentations and consequent traces of lobulization conform closely to the areas of distribution of the main vessels. The lower, nearly isolated portion of glandular tissue is supplied by a branch from the right mandibular artery which enters the gland on its ventral aspect. The partially detached portion of tissue is placed close to the point of entrance of this vessel and is therefore supplied by the right thyroid artery and not by the left, the vessel entering at the free end of the partially detached lobule; on the left this lobule is continuous with the body of the gland but does not, as one might expect, derive its blood supply therefrom. The right thyroid artery also sends an anterior branch to supply the right posterior third of the main portion of the organ. The remainder of the gland is supplied by a corresponding vessel, a branch of the left mandibular artery, whose area of distribution is much more extensive than that of the right thyroid artery; it enters the dorsal surface of the thyroid gland.

The arterial connections were traced with the aid of injections of India ink into the conus arteriosus or into the cardiac ventricle of a freshly opened fish by means of a hypodermic syringe having a needle of very fine caliber. The continued contractions of the ventricle were sufficient to auto-inject the vessels under consideration.